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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,482	04/25/2001	Gary B. Gordon	10980523-1	9824

7590 10/07/2003

IP Administration
Legal Department, 20BN
HEWLETT-PACKARD COMPANY
P.O. Box 10301
Palo Alto, CA 94303-0890

EXAMINER

BAKER, MAURIE GARCIA

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 10/07/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,482

Applicant(s)

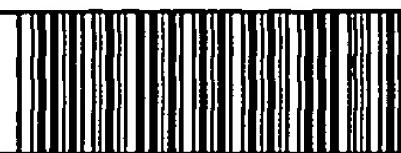
Gordon et al

Examiner

Maurie G. Baker, Ph.D.

Art Unit

1639



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jul 22, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-35 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.
2. The amendment filed with the request for continued examination on July 22, 2003 (Paper No. 11) has been entered. In this paper, claims 33-35 were amended and no claims were added. Therefore, currently claims 33-35 are pending and under examination.

Status of Rejections & Response to Arguments

3. The previous claim rejections are withdrawn in view of the claim amendments. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection set forth in this action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montgomery (US 6,093,302) in view of Bassous et al (US 4,047,184) and the statements in the instant specification on page 22, lines 21-29.

The following analysis is used for this rejection:

Claim 33 is directed to a “method of fabricating a plurality of individual chips for conducting chemical reactions”. The claim goes on to recite in step (a) “each site for electronically carrying out a chemical reaction”. Similarly, claim 34 is directed to a “method of fabricating a plurality of individual chips for conducting a part of a synthesis of oligonucleotides” reciting in step (a) “each site for electronically carrying out a part of a synthesis of oligonucleotides”; and claim

35 is directed to a “method of fabricating a plurality of individual chips for conducting a synthesis of oligonucleotides to form oligonucleotide arrays” reciting in step (a) “each site for electronically carrying out a synthesis of an oligonucleotide to form oligonucleotide arrays”. The methods of the claims, however, comprise just two steps – “(a) preparing a plurality of said chips on a single silicon substrate...”, and “(b) severing said single silicon substrate into said individual chips”. The limitations in the preamble (“for conducting ...”) and in step (a) (“for electronically carrying out ...”) mentioned above are intended use recitations that merely recite the purpose of the process or the intended use of the structure and thus have not been accorded any patentable weight.

See MPEP 2111.02: A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. *In re Hiraio*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976); and *Kropa v. Robie*, 187 F.2d at 152, 88 USPQ at 481. Also, “[i]n a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.” *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). Thus, the recitations in each of the claims described above (in the preamble “for conducting ...” and in step (a) “for electronically carrying out ...”) have not been given any patentable weight.

However, note that the primary reference used in this rejection (i.e. Montgomery) does deal with the synthesis of arrays of chemical polymers, e.g. nucleic acid sequences; see Abstract.

Montgomery teaches a method for electrochemical solid phase synthesis utilizing an array of electrodes (see patented claims 15 & 40). The electrode arrays of Montgomery are fabricated on a single silicon substrate using standard VLSI techniques and CMOS circuitry that is well known in the art. Specifically see column 31, line 46 – column 32, line 53; especially column 32, lines 14-21. The reference also teaches that the arrays can be any geometry and can contain electrodes of various sizes in various matrixes (see column 22, lines 17-52). Thus the electrode arrays of Montgomery read directly on the chips that are fabricated in the claimed methods.

Montgomery is silent as to the fabrication of more than one chip on a wafer (i.e. fabricating a plurality of chips) and the “severing” step. However, such a technique is very well-established in the art. For example, Bassous et al teach creation of an electrode array and state that more than one array can be made on a single substrate where each electrode array chip is separated by scribing and dicing (see e.g. column 6, lines 34-37).

Moreover, applicants own specification states that art standard techniques of synthesis of the devices were utilized. See instant specification on page 22, lines 21-29: the “devices used in the present invention may be fabricated

according to procedures well-known to those skilled in the art of digital and IC design”.

Lastly, it is noted that optimization of process steps is within the routine skill of the art. *In re Burhans*, 154 F.2d 690, 69 USPQ330 (CCPA 1946). Also, “[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA1955).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to fabricate more than one of the devices (arrays of electrodes) of Montgomery; i.e. make more than one chip on a wafer and separate these chips via dicing. The general methodology of making multiple arrays on a single chip was well-known in the art as demonstrated by Bassous et al and the instant specification. Thus applicants claims merely represent routine optimization. One of ordinary skill would have been motivated to create multiple chips for convenience in carrying out multiple experiments and for ease of manufacture. One of ordinary skill would also have had a reasonable expectation of success based on the fact that such fabrication procedures were well known and routine in the art at the time of filing.

Status of Claims/Conclusion

7. No claims are allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurie Garcia Baker, Ph.D. whose telephone number is (703) 308-0065. The examiner is on an increased flextime schedule but can normally be reached on Monday-Thursday and alternate Fridays from 9:30 to 7:00.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang, can be reached at (703) 306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Maurie Garcia Baker, Ph.D.
October 1, 2003



MAURIE GARCIA BAKER PH.D.
PRIMARY EXAMINER